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Farnell

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(54) **PROCESS FOR THE CONVERSION OF A HYDROCARBON FEEDSTOCK INTO A SYNTHESIS GAS**

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See application file for complete search history.

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(57) **ABSTRACT**

A process for converting a hydrocarbon feedstock into a synthesis gas includes: (i) passing a first stream including a hydrocarbon and steam to externally-heated catalyst-filled tubes in a heat exchange reformer where steam reforming reactions take place to generate a first reformed gas mixture, (ii) passing a second stream including a hydrocarbon and steam, after a heating step, to an autothermal reformer, where it is combined with an oxidant gas containing free oxygen and autothermally reformed to generate a second reformed gas mixture, (iii) mixing the second reformed gas mixture and the first reformed gas mixture to form a combined reformed gas mixture, and (iv) using the combined reformed gas mixture to heat the catalyst filled tubes in the heat exchange reformer to form a partially-cooled combined reformed gas mixture, wherein the partially-cooled combined reformed gas mixture is used to pre-heat the second stream fed to the autothermal reformer.

14 Claims, 2 Drawing Sheets

